

REMARKS/ARGUMENTS

Reconsideration and allowance in view of the following remarks are respectfully requested.

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Applicant and the undersigned wish to thank Examiner Cecil for the courtesies extended during the telephone interviews of December 18, and December 21, 2007. Claims 31-34 have been canceled as proposed by the Examiner. Also, the arguments made during the interview are repeated herein for the record.

Claims 1, 3, 10-11, 15-17, 19-20, 22, and 29-34 were rejected under 35 USC 103(a) as being unpatentable over Isozumi in view of Verlag. Applicant respectfully traverses this rejection.

The Examiner contends "that there certainly exists a cross-sectional area of the tubular passage of Isozumi (adjacent the inlet section) that is equal to or smaller than the cross-sectional area of the filter openings", but acknowledges that Isozumi fails to disclose a tubular fluid passage that has a cross-sectional area equivalent to or smaller than a summation of cross-sectional areas of the holes at every point along the length of the filter section. The Examiner asserts that in view of Verlag, however, it would have been obvious to modify Isozumi so as to meet the limitations of applicant's claims.

At the outset, the applicant respectfully challenges the Examiner's contention "that there certainly exists a cross-sectional area of the tubular passage (adjacent the inlet section) that is equal to or smaller than the total cross-sectional area of the filter openings". Because Isozumi does not teach or in any way suggest the relative dimensions of the passage and the filter openings, the Examiner cannot properly contend that this relationship "certainly exists".

In addition, the intent of Isozumi is to determine the size of each square opening in a way that will prevent clogging from freezing, and the square opening (filter opening) is a dominant factor regulating the amount of fuel injected into the engine. Thus, the object, configuration, and feature of Isozumi are different from that defined by claims 1 and 11.

Applicant also respectfully submits that the Examiner's reliance on Verlag does not overcome the deficiencies of Isozumi in this regard. Indeed, although Verlag teaches that the total section of the small holes "is larger than that of the hole of the machine nozzle" this teaching is of no relevance to the relationship between the total cross-sectional area of the filter openings and the cross-sectional area of the tubular fluid passage.

Indeed, according to Verlag, the holes have a total section that is larger than that of the "hole of the machine nozzle" for minimizing pressure loss at a high velocity of supplying the solution. However, Verlag does not describe or depict where the "hole of the machine nozzle" is. It is respectfully submitted that the skilled artisan would not literally associate the recited "hole of the machine nozzle" with the tubular fluid passage (donut shape) defined between the filter section and the nozzle body. In Verlag, the "hole of the machine nozzle" would apparently be the gap between a tip end of the closing bar and the dip nozzle head on the left side of the cited figure, or the diameter of the passage in the dip nozzle head itself. In either case, the "hole of the machine nozzle" is clearly remote from the tubular fluid passage and there is no teaching or suggestion in Verlag of a particular relation between the cross-sectional of the tubular fluid passage in Verlag and the summation of the cross-sectional areas of the holes in the filter section.

In this respect, the Examiner's analysis of Verlag is respectfully submitted to be flawed. For example, after noting that Verlag teaches that the total section of the small holes is larger than that of the hole of the machine nozzle, the Examiner asserts that

"since the cross-section of the gap [tubular passage] is smaller at each point along the filter section than the bore hole (nozzle opening), the gap is certainly smaller than the total of the hole openings". However, the Examiner has no support for this allegation because the bore hole (nozzle opening) is not identified in Verlag. Therefore, this conclusion is without any basis in fact and is a matter of pure conjecture. Indeed, in the cited Verlag reference, the cross-sections of the machine nozzle, the removable filter and the closing bar are all entirely blacked out. The structure of Verlag is obscured and it is impossible to determine from Verlag's disclosure or drawing what is considered to be the "hole of the machine nozzle".

Applicant has attached a sketch of a possible configuration of the Verlag machine nozzle. It is unclear if the hole, as noted above, is the gap between the tip end of the closing bar and the dip nozzle head on the left side of the figure or the diameter of the passage in the dip nozzle head itself. In either case, that nozzle hole is clearly remote from the tubular fluid passage around the filter and it cannot be determined with certainty what relation exists between its cross-sectional area and the cross-sectional area of the tubular passage. However, measuring from the drawings, the cross-section of the hole of the nozzle would appear to be about the same as or smaller than that of the closing bar, which would be much smaller than that of the tubular passage (donut around the filter). Thus, the relation between the nozzle hole and the filter holes has no bearing on and does not teach a relationship between the cross-section of the tubular passage and the filter holes.

Because Verlag clearly does not provide any characterization of the location of the hole of the machine nozzle and in view of the way in which "hole" is normally understood, it is respectfully submitted that Verlag does not teach or suggest the relation between the tubular fluid passage and the holes in the filter section as recited in applicant's claims 1 and 11. It is therefore respectfully submitted that claims 1, 11 and the claims dependent therefrom are not anticipated by nor obvious from Isozumi taken alone or in combination with Verlag.

For all the reasons advanced above, reconsideration and withdrawal of the rejection based on Isozumi and Verlag is requested.

Claims 2, 18, and 21 were also rejected under 35 USC 103(a) as being unpatentable over Isozumi in view of Verlag and further in view of JP 5-269316. Applicant respectfully traverses this rejection.

The Examiner asserts that it would be obvious to adopt the hemispherically shaped closed end of JP '316 in Isozumi. Applicant respectfully disagrees. Firstly, JP '316 does not teach a "hemispherically-shaped" closed end. In this regard, although JP '316 mentions that one end of the filter tube is sealed, there is no teaching that the sealed end is extensive enough so as to define a "hemispherically-shaped" closed end much less that there would be a reason to provide such a shaped end in Isozumi. Indeed, as noted above, Isozumi teaches no particular function of his closed end nor significance to the shape thereof. Likewise, JP '316 appears to have a rounded end simply because the filter is formed from porous silica that must be sealed at the end for the end to be closed. Because Isozumi does not relate to a porous silica structure, there is absolutely no reason whatsoever to reshape the end of Isozumi's filter to be hemispherical, much less to form the side walls thereof to define a constant cross-sectional area for the tubular passage way. Because the structural make up and composition of each of these two filters is different, the skilled artisan would not piecemeal select isolated characteristics of JP '316 and incorporate them in Isozumi.

Section 103 does not allow the Examiner to engage in picking and choosing from the prior art only to the extent that it will support a holding of obviousness, while excluding parts of the prior art essential to the full appreciation of what the prior art suggests to one of ordinary skill in the art. In re Wesslau, 147 USPQ 391 (CCPA 1975).

As the CAFC has said, obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. ACS Hospital Systems v Montefiore

Hospital, 221 USPQ 929, 933 (Fed. Cir. 1984). There must be a suggestion in the art relied upon to use what one reference discloses in or in combination with the disclosure of the other reference or references relied upon by the Examiner. In re Grabiak, 226 USPQ 870, 872 (Fed. Cir. 1986).

Thus, it is submitted that the skilled artisan would adopt Isozumi or JP '316 in the alternative and would not be motivated to adopt a piecemeal combination of their structures.

It is further respectfully noted that JP '316 fails to teach or describe any relationship between the cross-sectional area of the tubular fluid passage and the summation of cross-sectional areas of the pores/holes. Thus, JP '316 does not overcome the deficiencies of Isozumi and Verlag noted above.

In summary, Isozumi, Verlag and JP '316 do not motivate the skilled artisan to produce the feature of claims 1 and 11 in which the tubular fluid passage regulates the fluid flow thereby enhancing performance of the injector. It is therefore respectfully submitted that claims 1 and 11 and the claims that depend therefrom are not anticipated by Isozumi and not obvious over Isozumi, Verlag, and/or JP '316.

Claims 4-8, 13 and 23-28 were rejected under 35 USC 103(a) as being unpatentable over Isozumi in view of Verlag and further in view of Neuman. Applicant respectfully traverses this rejection.

As noted above, Isozumi provides a filter wherein a mesh defines the filtering side wall of the filter. The simple filter mesh has square openings and the focus of Isozumi is the appropriate size of the sides of such openings.

The reference to Neuman cited by the Examiner teaches shaped filter openings defined through a metal side wall. Because Isozumi provides a filter mesh for his filter and teaches in great detail the criticality the size of his filter mesh holes, it is respectfully submitted that it would not be obvious for the skilled artisan to abandon

Isozumi's invention and provide instead shaped bores as taught by Neuman. The Neuman shaped bores are not provided as a mesh, are not square in shape, and there is certainly no teaching in Neuman of how shaped bores could be provided in a simple mesh of the type Isozumi discloses. It is therefore respectfully submitted that the skilled artisan would not modify Isozumi in view of Neuman, but would select one of these two structures in the alternative.

Claims 2, 18, 21, 23, and 26 were rejected under 35 USC 103(a) as being unpatentable over Isozumi in view of Verlag and further in view of Stamstad. Applicant respectfully traverses these rejections.

Stamstad discloses a filter having a hemispherically-shaped closed end defining the fluid passage. However, Stamstad fails to teach or describe the relationship between the cross-sectional area of the tubular fluid passage and the summation of cross-sectional areas of all of the holes in a filter-section.

Thus, currently amended claims 1 and 11 and the claims that depend from claims 1 and 11 are not anticipated by Isozumi, and are not obvious over Isozumi, Verlag and/or Stamstad.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

YAMAGUCHI et al.
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Respectfully submitted,

NIXON & VANDERHYE P.C.

By:

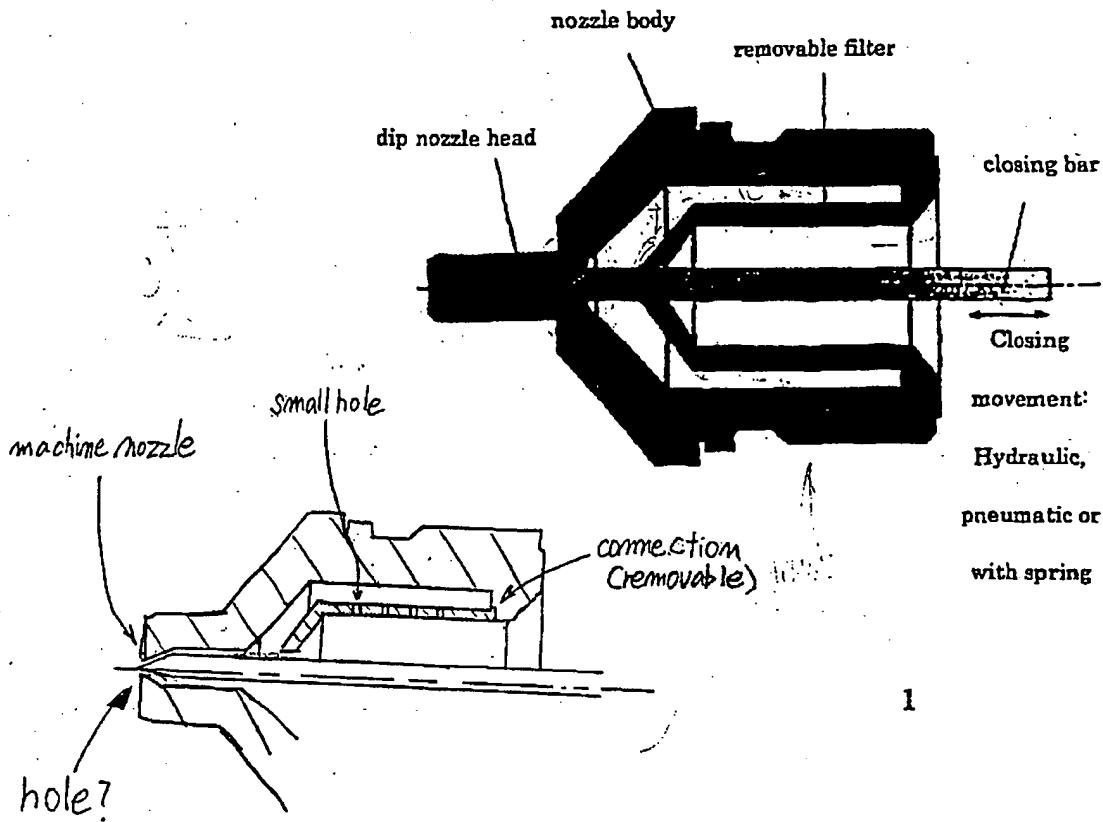


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By using this closing
nozzle with a melt filter,
it is especially expected
to supply the solution at
high velocity.